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The Classic

On Rest and Pain: Lecture XIV

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Abstract This Classic article is a reprint of the original work by John Hilton, *On Rest and Pain: Lecture XIV*. An accompanying biographical sketch on John Hilton, MD, is available at DOI [10.1007/s11999-009-0927-2](https://doi.org/10.1007/s11999-009-0927-2). The Classic Article is reprinted with courtesy from Hilton J. *On The Influence of Mechanical and Physiological Rest in the Treatment of Accidents and Surgical Diseases*, and the

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Hip-joint disease not necessarily scrofulous—Importance of diagnosing hip-joint disease in an early stage—Distribution of nerves to the hip-joint—Earliest symptoms of hip-joint disease—Disease of shoulder-joint not kept at rest, joint destroyed; hip-joint-disease in the same patient cured by rest—Dwarfed pelvis as a result of hip-joint disease—Diseased hip-joint cured by five months' rest—Another case of twelve months' standing cured by seven months' rest—Hip-disease in a scrofulous patient cured by rest—Diseased hip-joint, limb bent, straightened under influence of chloroform, and cured by rest—Dislocation on dorsum ilii from disease reduced, ankylosis proceeding—Similar case, dislocation twice reduced.

It will be the object of this lecture to direct your attention to diseases of the hip-joint, and to demonstrate the value of rest as a therapeutic agent in such cases.

I may commence this subject by observing, that in most systematic works on Surgery, whilst diseases of the joints are arranged under one head, there is generally a separate chapter devoted to morbus coxæ, or morbus coxarius as it is

termed. We are thus led to entertain the idea that there is some special peculiarity with respect to the diseases and symptoms, or the pathological anatomy of the hip-joint. I believe this to be a mistaken idea. So far as I know there is nothing in any way special or peculiar as regards the structures or the diseases of the hip-joint, when compared with those of other joints. Their physiological and pathological conditions are in no way peculiar, being obedient to the same laws which are observed to prevail in other joints. Nor do I believe that there is anything distinct in the constitutional tendency of hip-joint disease, though it seems to me that professional opinion points to the hip-joint as emphatically the chosen seat, or special locality, for the manifestation of scrofulous disease of joints. This, to my mind, is a great error—an error, also, which has a very bad influence. If we understand by the term scrofula a constitution highly cachectic, tuberculous, or at any rate disposed to the formation of tubercle, or with tubercle already existing in the diseased part, then if we regard a case of hip-joint disease as purely scrofulous in this manner, the prospect of relief to the patient will appear very small (something like that which may be expected by a person who is suffering from pulmonary consumption, with the probability of an early death

before him), and the treatment will thenceforth be likely to assume a palliative rather than a strictly curative character. If the surgeon affix such an idea to every case, or to the majority of cases of hip-joint disease coming under his notice, he will feel little disposed to adopt anything like a persevering plan in his practice, and without such a plan he will surely fail in the proper treatment of the disease.

Another error often committed is one which we have inherited from a previous generation of surgeons, the entail of which I should like to see cut off. It was, and is now in some places, the disposition of surgeons to require that the patient suffering from hip-joint disease should manifest those marked symptoms which are deemed to be characteristic of hip disease, such as the shortening or the lengthening of the limb, a fulness or flatness over the gluteal region, want of symmetry in the sub-gluteal folds, pain at the inner side of the knee, greatly disturbed health, and considerable lameness. Now, the very fact of its being the opinion of some surgeons that shortening of the limb is characteristic of the disease, and of others, that lengthening of the limb is characteristic of it; of some, that there should be a want of symmetry in the gluteal region, and of others, that the symmetry is not necessarily altered—all this, I think, is a satisfactory proof that these symptoms may fail as direct and positive indications. As far, however, as I have been able to judge, lengthening or shortening of the limb in the early stage of the disease is almost always the result of inclination of the pelvis. I have taken great care and trouble to determine this point, by carefully measuring and comparing the two limbs, and I do not know that I have ever seen a case of well-marked uncomplicated hip-joint disease where there was a difference in the measurement in which the lengthening or shortening did not depend upon the inclination of the pelvis. I am not speaking of cases of advanced disease about the joint, nor of cases of dislocation from disease. These highly characteristic symptoms, which are put prominently forward as indicating disease of the hip-joint, are not the early symptoms of hip-joint disease. When we see such symptoms, we may be sure that the disease in the joint has made considerable progress. It is highly important that the surgeon should recognize the diseased condition of the joint previous to that period, for that is the time when the most beneficial effects will follow a steady and long-pursued plan of treatment by rest.

If we succeed in an early diagnosis of disease of the hip-joint, I am quite confident that it will not fall to the lot of surgeons to see those sad and sometimes hideous cases which we so frequently observe, more particularly in hospital practice. It is, I think, a most serious fault for surgeons to assume that there is nothing wrong in the hip-joint, unless some of these very conspicuous symptoms be present. The all-important point is the early recognition of the first deviation from a healthy state; and I would

anxiously urge upon you, that even a suspected state of disease justifies a plan of treatment by rest, which, in my belief, would, in the majority of such doubtful cases, be the means of preventing the occurrence of the more formidable symptoms. I would venture to affirm, that if even the more advanced and more formidable symptoms be displayed, still the case may be amenable to the influence of rest, and this I hope to prove by illustrative cases.

Referring to hip-joint disease in children, let me say, it will be especially important for the surgeon to bear in mind that the acetabulum in a child is very shallow compared with that of an adult. It thus offers great facility for displacement. This, I apprehend, may be the reason why there is so often a tendency to dislocation of the thigh-bone in hip-joint disease at an early period of life. I do not know that this is the only element which determines this tendency, but I think it may be considered an influential one. I shall not dwell upon the anatomy of the hip-joint, except to remind you that its muscles perform their functions in groups, that each group has a trunk nerve of its own, and that each nerve contributes a branch to the hip-joint itself. In Figs. 60 and 61 you see a branch of the anterior crural nerve passing to the hip-joint; a branch of the obturator going to the capsular ligament and to the ligamentum teres; and a branch proceeding to the posterior aspect of the hip-joint from the sacral plexus which supplies the gemelli, the quadratus femoris, and the obturator internus. This anatomy should be borne in mind, because it explains how it happens that the remote and “sympathetic pains,” associated with an inflammatory condition or chronic disease of the hip-joint, are not always found at the same part of the limb. We all know very well that, in some cases of hip-joint disease, One of the earliest symptoms is remote from the actual seat of mischief—namely, pain within the knee, or on the inner side of the knee-joint; and we are familiar with



Fig. 60 Sketch of nerves supplying the anterior and inner parts of the capsular ligament of the hip-joint. **a**, Filaments from the anterior crural nerve. **b**, Filaments from the obturator nerve.



Fig. 61 This drawing represents some of the articular nerves of the hip-joint. It is a view of the posterior aspect of that articulation. **a**, Branches of nerves from sacral plexus. **b**, Terminal filaments of the obturator nerve.

the explanation of it—namely, that the obturator nerve, which contributes a branch to the ligamentum teres, sends a branch to the interior of the knee-joint, to the inner side of it, and sometimes even lower down. The inflammation or a diseased condition of this ligament necessarily involves the little branch of the obturator nerve, and a “sympathetic” pain is produced at the other end of the same nerve, on the inner side of the knee or within the knee-joint. As it is frequently with the obturator, so it ought to be sometimes, with respect to the other nerves of the hip-joint; but the frequency of this knee-pain, whether within the knee-joint or on its inner side, indicates that the ligamentum teres is the most common seat of early disease. We observe this same “sympathetic” pain in old persons, who may or may not have had a slight injury to the hip, but in whom the ligamentum teres softens down and disappears. Such persons often complain of severe pain within or on the inner side of the knee-joint. Some years ago I saw a case in which, after injury to the hip, this symptom of pain in the knee-joint was well and early marked. Afterwards the limb was slightly shortened, and the foot everted, imitating the reputed symptoms of fractured neck of the thigh-bone. I subsequently examined this patient’s hip-joint, and found that the injury was confined to the ligamentum teres.

Now, suppose the anterior part of the capsular ligament (which receives a branch from the anterior crural) is inflamed, applying the same law, you will see how it may happen that a patient with a diseased hip-joint may have pain on the front of the knee, or on the inner side of the ankle, because the anterior crural nerve sends branches to these particular spots. Or if the inflammation or injury begins at the posterior part of the capsular ligament, which

receives a branch or branches from the sacral plexus, then the patient may have a “sympathetic” pain actually at the heel, or in the foot. I repeat these remarks in reference to the nervous supply, because an impression, I think, is abroad that the “sympathetic” pain of hip-joint disease is always on the inner side of the knee-joint, and that this local symptom is essential to a correct diagnosis. This, it seems to me, is not true. I admit its greater frequency, because, as has been already intimated (p. 221), the ligamentum teres is, perhaps, the part where hip-joint disease in reality most commonly begins, and this corresponds with the frequent observation of the “sympathetic” pain on the inner side of, or within the knee. To put this point more strongly: it sometimes happens in hip-joint disease that there is no pain in the knee-joint at all (I have seen several such cases); this local pain, therefore, must be considered as a fortuitous, not a constant, symptom, and not always to be relied upon as indicative of diseased hip-joint.

We ought further to bear in mind that the hip-joint lies very deeply, and that therefore one of the earliest symptoms of an inflammatory condition—a sense of heat in the part—is not likely to be recognized early in the disease except by careful manipulation. There is no local symptom which characterizes the inflammatory condition of a joint so certainly as the increase of temperature in and over the part inflamed. This is one of the symptoms on which every surgeon may positively rely when examining a suspected disease of any joint, provided he is able to make accurate manual examination of it, in reference to the existence or non-existence of an inflammatory condition. When this local symptom of increased heat exists, it is absolutely satisfactory. But you will observe it is one of the symptoms which you may not be able to reach in a very early stage of hip-joint disease, because the joint which is the seat of the inflammatory heat lies so deeply, and is covered at some parts by such a large mass of soft structures, that it is difficult for the hand to appreciate an increase of temperature on the surface. When, however, with the other symptoms of lameness and tenderness to which I will presently allude, you find an increase of heat in the neighbourhood of the hip-joint, you may be sure of the existence of a subjacent inflammatory condition.

Here, then, we see two sources of fallacy which have existed in the diagnosis of hip disease: one as to the position of the “sympathetic” pains, and the other as to the non-existence of heat.

There is another source of difficulty in the diagnosis, to which I shall refer again (Lect. XVI), namely, cerebral or spinal-marrow disease, which may induce or cause some of the physical signs of hip-joint disease.

Now let us consider what may be the earliest symptoms of hip-joint disease in children. Here I may remark that I cannot conceive why it is that surgeons do not examine the

hip-joint itself in the same exact, direct and methodical manner that they employ in the examination of other joints: why, in examining a suspected or obscure case of disease in the neighbourhood of the hip-joint, they should depend upon, or place so much reliance on, what might be called the outlying symptoms. If we are desirous of ascertaining the nature of an abnormal condition of the ankle, knee, elbow or shoulder joints, we try to make out the actual condition by close and precise manual examination of the joint in reference to the exact site of the pain, the sense of heat at the joint, and the influence of direct pressure upon the articular surfaces. But, with regard to the hip-joint, many surgeons seem to be satisfied with merely examining the general features of the case in order to recognize those outlying symptoms which are described in books as characteristic and indicative of hip-joint disease.

If we see a child with a slight degree of limping or lameness in walking, that must depend upon something. If we recognize no indication of an inflammatory state by the increase of heat in the ankle, or the knee-joint, or the foot, and no pain at all on isolated or definite pressure by the hand at either of these parts, we may be certain that the mischief is not there, and we may be pretty confident that it will be most probably found at one of the pelvic joints, or in the immediate neighbourhood of the hip-joint, either within the articulation itself or the epiphyses of the bones. Possibly, on placing the hand attentively upon these latter parts, the precise seat of the mischief may be detected by a greater or less increase of temperature at that spot, and this symptom is usually, and more especially, manifested towards evening, and after walking exercise. This point may be deemed by some unworthy of notice; but it is one which we ought not to forget—that a slight inflammatory condition may manifest itself by local heat in the evening, after the exercise of the day, but, by the rest of a few hours during the night, it may almost disappear in the morning. In hip-joint disease the femur is slightly bent upon the abdomen, and somewhat adducted, and this occurs from the combined action of the flexors and adductors, which compels the thigh-bone to follow the mean direction of the two muscular forces. There is a constant law, to which I have already alluded—that when a joint is inflamed, the movable part of it is obedient to the more powerful muscular action. If, then, you see a child that limps a little in walking, the femur, somewhat bent upon the abdomen, and the toe a little pointed, with inability to bear the whole weight of the body upon the limb, and when you make a little pressure over or upon the trochanter major, excessive or moderate pain is felt, as compared with the result of a like pressure upon the corresponding parts of the opposite side; if in association with these signs there be pain on pressure upon the front of the hip-joint, and pain in or near the hip-joint when the foot is lightly struck upon, its sole;

and if, in addition to these local symptoms, there be a slight degree of febrile excitement towards night, a little restlessness during the night, with occasional starting of the limb, the suspected limb being more flexed and more adducted during sleep (an almost constant occurrence), then, I say, you may be sure that these symptoms are indicative of something wrong in or near the hip-joint itself. It will be remembered that, at the early period of life to which I am now alluding, the bones forming the joint are composed of several parts (Fig. 62). The trochanter major is an epiphysis; so is the trochanter minor; so likewise the head of the femur is an epiphysis, having a separate circulation, and joined to the neck of the femur by temporary cartilage. This is no mere anatomical refinement, for I place before you a pathological specimen which will testify to the fact that the results of disease may be modified by the normal anatomy of that early period of life. We have here (Fig. 63) a drawing of a preparation from Guy's

Fig. 62 Sketches of young thigh-bones (copied from Quain's *Anatomy*), showing the epiphyses or separable pieces of the bones. 1, Head of thigh bone. 2, Trochanter major. 3, Trochanter minor. 4, Condyles. The head and the two trochanters unite with the shaft about the eighteenth year; the lower epiphysis remains distinct from the shaft till after the twentieth year.

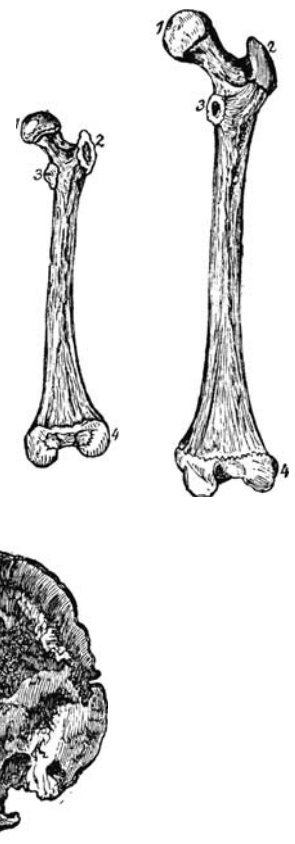


Fig. 63 Epiphysis of the head of the thigh-bone spontaneously detached. It presents two surfaces—one convex, the other concave. The convex articular surface is deprived of the whole of its articular cartilage, but the articular lamina of bone remaining gives it a smooth appearance. The concave surface is scabrous and uneven, having undergone partial absorption. There is no structural indication of scrofula in this piece of bone. **a**, Convex articular surface. **b**, Concave surface by which it was united to the neck of the thigh bone through the medium of temporary cartilage supported by a thin plate of bone, a small part of which remains, and is that on which the letter **b** is placed.

Museum, sent there by Dr. Holman, of Reigate. It is the epiphysis of the head of the thigh-bone separated from the neck of the femur, in a girl fourteen years old. He discovered it lying in the upper part of the thigh, within the abscess associated with the hip-joint disease, and, by making a small incision through the soft parts, he was enabled to take it out. Dr. Holman informs me that this patient is dead, and that he had not the opportunity of examining the body.

Now, to revert to the symptoms of hip-joint disease. If a patient presents such local and general symptoms as those to which I have alluded, it is hardly worth while going into the question as to what tissue is involved in the mischief. That, to my mind, is a pathological refinement which is of no advantage whatever in the treatment of the case. I think it is beyond the professional acumen of any man to be able to tell decidedly, at that period of childhood, whether the disease be between the neck of the bone and its epiphysis, the head, or whether it be in the ligamentum teres, or upon the surface of the head of the bone, or upon the floor of the acetabulum, which at that period is divided into three segments, indicating the separate contributions of those three individual parts—the pubes, ischium and ilium.

A little child, however, suffering from such so-called obscure or uncertain symptoms of hip disease, is likely to suffer from a misinterpretation of the symptoms, on the supposition that they may be caused by teething, or perhaps rheumatism. These, I may say, are very common professional phantoms with the surgeon when considering such a case, so that all the attention is given to the innocent teeth and gums, which are scarified and punished unfairly for sins which do not belong to them, whilst the hip-joint symptoms are allowed to continue, or are left to themselves, to constitute what may be a fatal mistake. The other day I spoke to Mr. Thomas Bell as to what he had observed

in his large experience on this matter, and his opinion coincided with my own views as to this misplaced association of teething and hip disease. He added, “I wish you would also intimate that a very great deal of mischief is often done to the evolution of teeth, by scarifying the gums too deeply.” It is obvious that it must be so. If the gums are scarified-deeply, the rudimentary apparatus, which determines the development of the teeth, must be very much interfered with, either in their direction or integrity, by a reckless or badly directed incision into the gums.

I should have no hesitation, in a case presenting the hip-joint symptoms to which I have referred, in expressing my conviction that the femur or acetabulum has suffered local injury in some of its epiphyses, or that the soft parts of the hip-joint itself are inflamed; and that the essential, and probably the only required remedy would be sufficient mechanical rest, secured to the patient by the recumbent position during several weeks. In cases presenting these milder or less striking symptoms of hip-joint disease, I admit that it requires a strong determination on the part of the surgeon to say to the parents, “This child has disease about the hip-joint, or symptoms which lead to the suspicion that the hip-joint is diseased, and it is necessary that he should lie down for two or three months, with a splint upon the limb, to keep the joint quiet.” But I know from experience that we may act upon it with great and not unmerited confidence. I feel strongly on this matter, because I am confident that if these early symptoms are properly made use of, and the surgeon does not wait for the next series (said to be characteristic symptoms), which will be too conspicuous to everybody, he will not be troubled with long-continued cases of hip disease, nor will he meet with those old cases of deformed and displaced hip-joints as a result of disease, to which I have before alluded.